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10/725,729	12/02/2003	Roger D. Blotsky	02839.0003U1 (Blok120)	5386
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Ballard Spahr LLP SUITE 1000 999 PEACHTREE STREET ATLANTA, GA 30309-3915			EXAMINER AHMED, HASAN SYED	
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			1615	
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**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

### Office Action Summary

**Application No.**

10/725,729

**Applicant(s)**

BLOTSKY ET AL.

**Examiner**

HASAN S. AHMED

**Art Unit**

1615

**Period for Reply** -- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 29 March 2010.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-13 is/are pending in the application.
- 4a) Of the above claim(s) 2 and 12 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1, 3-11, and 13 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/GS/US)  
Paper No(s)/Mail Date \_\_\_\_\_
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: \_\_\_\_\_

### DETAILED ACTION

- Receipt is acknowledged of applicants' amendment and remarks, both filed on 29 March 2010.
- The 35 USC 112 second paragraph rejection of the previous Office action is withdrawn in view of the amendment.

\* \* \* \* \*

### *Status of the Claims*

Claims 1-13 are currently pending. Claims 1, 3-5, 7, 8, and 13 are currently amended. Claims 2 and 12 are withdrawn. Claims 1, 3-11, and 13 are rejected.

\* \* \* \* \*

### *Claim Rejections - 35 USC § 112*

The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

Claims 1, 3-11, and 13 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventors, at the time the application was filed, had possession of the claimed invention.

Specifically, newly amended claim 1, recites the transition phrase "consisting essentially of." After carefully examining the instant disclosure, examiner respectfully submits that support for this amendment is lacking and the addition of said limitation is

Art Unit: 1615

new matter. Specifically, the transition phrase "consisting essentially of" is not set forth in the instant specification. Furthermore, the specification does not disclose the materials or steps that materially affect the basic and novel characteristics of the claimed invention (see MPEP 2111.03). As such, support for the transition phrase "consisting essentially of" is lacking.

\* \* \* \* \*

***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

1. Claims 1, 3-8, 10, and 11 remain rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 3,617,215 ("Sugahara") (currently of-record).

Sugahara teaches an acid treatment process of natural alumina-silica type clay (see col. 3, lines 14-20) comprising mixing the clay with an acid followed by extraction and removal of basic metal constituents from the clay (reading on claim 1) (see col. 1, lines 10-13; Example 1). The disclosed process results in effective utilization of the acid used and the basic metal constituents that are recovered (see col. 2, lines 19-21). The clay is admixed with an aqueous acid solution to produce a slurry (reading on claim 1(i)) (see col. 2, line 28; col. 3, lines 55-60; col. 4, lines 40-42; col. 5, line 66 for slurry). The amount of aqueous solution is up to 2.5 parts by weight to one part by weight of the clay

(see col. 4, lines 42-44 - reading on the water concentration recited in claim 1(i)). The pH of the aqueous medium is acidic (reading on claims 1(iv) and 5) (see col. 2, line 35). Acetic acid (i.e. an edible acid) may be used (reading on claim 10) (see col. 3, line 63). In one embodiment, the mixture of clay and aqueous acid solution is then allowed to stand at room temperature in order to complete the reaction of the acid with the basic metal constituents contained in the clay; particles from the mixture would inherently settle in this step, reading on claim 1(ii) (see col. 4, lines 65-70). In one embodiment, the mixture of clay and aqueous acid solution may be sprayed into a heated environment to produce granules of basic metal constituents from the clay (reading on claims 3 and 4) (see col. 6, lines 35-42). The basic metal constituents contained in the clay are extracted into the aqueous acid solution and separated from the clay (reading on claim 1(iii)) (see col. 6, lines 51-54; col. 7, lines 26-28; Example I). The basic constituents extracted from the clay may be collected in a concentrated state (reading on claim 1(iv)) (see col. 7, lines 55-56; Example I). The recovered low pH mineral composition is used, e.g., as an extraction medium (see col. 7, lines 18-23) or as a water treatment flocculation agent (see col. 10, line 2). Regarding the pH recited in claim 1(iv), Sugahara teaches an acidic pH (see above); applicants have not shown criticality of the particular pH range being claimed.

Sugahara explains that this method is beneficial because it leads to effective utilization of acid and the extracted product (see col. 2, lines 19-21).

Regarding the clay soil components recited in claim 1(i), the concentration of calcium and silica recited in claim 1(i), the macro mineral elements recited in claim 6,

Art Unit: 1615

and the micro mineral elements recited in claim 7, both the instant specification (see page 7, line 10 – page 11, line 25) and Sugahara (see col. 3, lines 14-20) use the same starting material, i.e., natural, unprocessed clay. As such, a person of ordinary skill in the art would expect the clay being processed by Sugahara to contain the same components in the same amounts as that being used in the instant application. The atomic numbers recited in claim 8 are inherent to the rare earth elements.

While Sugahara teaches the use of edible acids, such as acetic acid (see col. 3, line 63), the reference does not explicitly disclose the citric acid of instant claim 11. However, a person of ordinary skill in the art would have been motivated to use citric acid in lieu of acetic acid in the claimed extraction process, since both are organic acids. Based on the teachings of Sugahara, there is a reasonable expectation that the use of acetic acid or citric acid would result in an effective extraction minerals from natural clay. As such, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to use acetic acid in lieu of citric acid in a mineral extraction of natural clay in view of the teachings of Sugahara.

It is noted that examiner will read the transition phrase “consisting essentially of” as “comprising” until applicants disclose the materials or steps that materially affect the basic and novel characteristics of the claimed invention. See 2111.03.

It would have been obvious to a person of ordinary skill in the art at the time the invention was made to disclose a method of preparing a mineral composition by acid extraction of clay soil, as taught by Sugahara. One of ordinary skill in the art at the time the invention was made would have been motivated to use such a method because it

Art Unit: 1615

leads to effective utilization of acid and the extracted product, as explained by Sugahara.

\*

2. Claims 1, 3-11, and 13 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 3,617,215 ("Sugahara") in view of U.S. Patent Application No. 2004/0258597 ("Michalakos") (currently of-record).

Sugahara is discussed above.

Sugahara differs from the instant application in that it does not teach the reverse osmosis of instant claims 9 and 13, however water purification by reverse osmosis was known in the art at the time the instant application was filed, as shown by Michalakos (*see* paragraph 0009). Concentration of a liquid is an inherent feature of the reverse osmosis process.

It would have been obvious to a person of ordinary skill in the art at the time the invention was made to disclose a method of preparing a mineral composition by extraction using water purified by reverse osmosis, as taught by Sugahara in view of Michalakos. One of ordinary skill in the art at the time the invention was made would have been motivated to use such a method because it leads to effective utilization of acid and the extracted product, as explained by Sugahara.

\* \* \* \* \*

### ***Response to Arguments***

Applicants' arguments filed on 29 March 2010 have been fully considered but they are not persuasive.

Applicants argue that Sugahara discloses a two-step acid treatment process which teaches away from the instantly claimed process.

Examiner respectfully submits that Sugahara teaches the acid-extraction process steps being claimed. As indicated in the substantive rejection, the mixing of clay soli with an aqueous acidic solution of claim 1(i), the settling step of claim 1(ii), the separating step of claim 1(iii), and the concentrating step of claim 1(iv) are all taught by Sugahara. Claim 1 recites a generic product resulting from the claimed process; i.e. "an extracted mineral product." As indicated previously, a bi-product disclosed by Sugahara is a low pH composition containing minerals extracted from natural clay, as explained in the 35 USC 103 rejection, above. Further, the instant specification, like Sugahara, recites a clay composition (i.e. the particles settled from the slurry) as one product of the process being claimed instantly (see Example 1).

Additionally, examiner respectfully disagrees that Sugahara's two-step acid treatment process constitutes a teaching away from the instantly claimed process since the instantly claimed process does not preclude the use of a two-step acid treatment process. The instantly claimed process merely requires that the clay soil be mixed in an aqueous acidic solution, followed by settling, separation of the acidic liquid, and concentration; as indicated in the substantive rejection, Sugahara teaches all of these steps.

Applicants argue that there is no motivation to combine the Sugahara with Michalakos.



Examiner recognizes that obviousness may be established by combining or modifying the teachings of the prior art to produce the claimed invention where there is some teaching, suggestion, or motivation to do so found either in the references themselves or in the knowledge generally available to one of ordinary skill in the art. See *In re Fine*, 837 F.2d 1071, 5 USPQ2d 1596 (Fed. Cir. 1988), *In re Jones*, 958 F.2d 347, 21 USPQ2d 1941 (Fed. Cir. 1992), and *KSR International Co. v. Teleflex, Inc.*, 550 U.S. 398, 82 USPQ2d 1385 (2007). In this case, reverse osmosis is a well known purification method; as Michalakos explains, reverse osmosis is useful in energy efficient water recovery (see [0008]). As such, examiner respectfully submits that a person of ordinary skill in the art would be motivated to obtain purified water by reverse osmosis with the teaching of Michalakos.

\* \* \* \* \*

### **Conclusion**

Applicants' amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any

Art Unit: 1615

extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

★

***Correspondence***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to HASAN S. AHMED whose telephone number is (571)272-4792. The examiner can normally be reached on 9am - 5:30pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Robert A. Wax can be reached on (571)272-0623. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/H. S. A./  
Examiner, Art Unit 1615

/Humera N. Sheikh/  
Primary Examiner, Art Unit 1615

